CLAIMS

1. (Original) A spring drive unit comprising: a base; a rotatable shaft mounted to the base; a spring mounted to the base and having a fixed end and a rotatable end; and a gear transmission of given drive ratio between two gears thereof, operatively connected at a first one of the two gears to the rotatable end of the spring and operatively connected at a second one of the two gears to the rotatable shaft, thereby applying the given drive ratio between the spring and the shaft for altering the force applied between the shaft and the spring and for altering the ratio of the shaft rotating speed to the spring rotating speed.

Claims 2 - 51 (Canceled).

52. (Previously presented) A cover system, comprising:

a base; an extendible cover mounted to the base and having a free end depending from the base; a rail mounted proximate the free end of the extendible cover; pulley means mounted proximate the base for rotation; and lift cord means wound around the pulley means and attached to the rail;

a spring drive system, comprising:

a spring drive comprising first spool means, second spool means, and a flat spiral spring mounted on and wound between the first and second spool means;

a cord transmission comprising first and second rotatable transmission shafts and a cord or band wrapped around the first and second transmission shafts for rotating the second transmission shaft at a rate that varies selectively relative to the rate of rotation of the first transmission shaft; the first transmission shaft being operatively connected to the second spool means; and the cord transmission thereby selectively varying the rotating speed of the second transmission shaft thereof relative to the rotating speed of the second spool means;

a gear transmission comprising a plurality of intermeshed gears, the gear transmission having a given ratio between two of the gears thereof; a first of the two gears being operatively connected to the second transmission shaft and the second of the two gears being operatively connected to the pulley means, thereby applying the given ratio of the gear transmission between the cord transmission and the pulley means for altering the speed of the second gear and of the pulley means relative to the speed of the first gear and of the second transmission shaft;

the extendible cover thereby being supported by the spring drive system via the lift cord means and being oriented such that moving the rail back and forth retracts and extends the extendible cover along a path between open and closed positions, and whereby the associated supported weight of the extendible cover varies along said path;

the force of the spring drive, the ratio of the variable ratio cord transmission and the ratio of the gear transmission being selected for counterbalancing the varying supported weight of the extendible cover along said path; and

the spring drive system maintaining the extendible cover at rest along said path.

53. (Previously presented) The cover system of claim 52, the cord transmission further comprising a pair of reverse oriented, conical spools having longitudinal axes and being rotatably mounted on the first and second transmission; the cord or band being wound on and between the conical spools; whereby during movement of the lift cord means and the cover, the relative rotating speed of the first and second transmission shafts is determined by the associated longitudinal positions of the cord along the conical spools and the diameters of the conical spools at said positions.

54. (Previously presented) A cover system, comprising:

a base; an extendible cover mounted to the base and having a free end depending from the base; a rail mounted proximate the free end of the extendible cover; pulley means mounted proximate the base for rotation; and lift cord means wound around the pulley means and attached to the rail;

a spring drive system, comprising:

a plurality of spring drives comprising first spool means, second spool means, and a plurality of flat spiral springs mounted on and wound between the first and second spool means;

a cord transmission comprising first and second rotatable transmission shafts and a cord or band wrapped around the first and second transmission shafts for rotating the second transmission shaft at a rate that varies selectively relative to the rate of rotation of the first transmission shaft; the first transmission shaft being operatively connected to the second spool means; and the cord transmission thereby selectively varying the rotating speed of the second transmission shaft thereof relative to the rotating speed of the second spool means;

a gear transmission comprising a plurality of intermeshed gears, the gear transmission having a given ratio between two of the gears thereof; a first of the two gears being operatively connected to the second transmission shaft and the second of the two gears being operatively connected to the pulley means, thereby applying the given ratio of the gear transmission between the cord transmission and the pulley means for altering the speed of the second gear and of the pulley means relative to the speed of the first gear and of the second transmission shaft;

the extendible cover thereby being supported by the spring drive system via the lift cord means and being oriented such that moving the rail back and forth retracts and extends the extendible cover along a path between closed and open positions, and whereby the associated supported weight of the extendible cover varies along said path;

the force of the plurality of spring drives, the ratio of the variable ratio cord transmission and the ratio of the gear transmission being selected for counterbalancing the varying supported weight of the extendible cover along said path; and

the spring drive system maintaining the extendible cover at rest along said path.

55. (Previously presented) The cover system of claim 54, the cord transmission further comprising a pair of reverse oriented, conical spools having longitudinal axes and being rotatably mounted on the first and second transmission; the cord or band being wound on and between the conical spools; whereby during movement of the lift cord means and the cover, the relative rotating speed of the first and second transmission shafts is determined by the associated longitudinal positions of the cord along the conical spools and the diameters of the conical spools at said positions.

56. (Previously presented) The cover system of claim 54, the first spool means comprising a plurality of storage spools; the second spool means comprising a plurality of output spools; and the individual spring drives comprising a flat spiral spring wound on and between a storage spool and an output spool; and wherein the output spools are operatively connected to the pulley means.

57. (Previously presented) The cover system of claim 56, the cord transmission further comprising a pair of reverse oriented, conical spools having longitudinal axes and being rotatably mounted on the first and second transmission; the cord or band being wound on and between the conical spools; whereby during movement of the lift cord means and the cover, the relative rotating speed of the first and second transmission shafts

is determined by the associated longitudinal positions of the cord along the conical spools and the diameters of the conical spools at said positions.

58. (Previously presented) The cover system of any of claims 52-53, the flat spiral spring as fabricated comprising a cove which varies along at least a longitudinal section of the as-fabricated flat spiral spring prior to mounting thereof, for selectively varying the force associated with said section of the mounted flat spiral spring as the mounted flat spiral spring winds and unwinds.

59. (Previously presented) The cover system of any of claims 52-53, the flat spiral spring as fabricated comprising a cove which varies longitudinally along the as-fabricated flat spiral spring prior to mounting thereof, for selectively varying the force of the mounted flat spiral spring as the mounted flat spiral spring winds and unwinds.

60. (Previously presented) The cover system of any of claims 54-57, the flat spiral springs as fabricated comprising a cove which varies along at least a longitudinal section of selected ones of the as-fabricated flat spiral springs prior to mounting thereof, for selectively varying the forces associated with said sections of the mounted flat spiral springs as the mounted flat spiral springs wind and unwind.

61. (Previously presented) The cover system of any of claims 54-57, the flat spiral springs as fabricated comprising a cove which varies longitudinally along the as-fabricated flat spiral springs prior to mounting thereof, for selectively varying the forces

associated with the mounted flat spiral springs as the mounted flat spiral springs wind and unwind.

62. (Previously presented) The cover system of any of claims 52, 54 and 57, further comprising: a crank mechanism operatively connected to the pulley means, providing access to the pulley means at a distance from the pulley means for rotating the pulley means to extend and retract the associated cover.

63. (Previously presented) The cover system of claim 62, the crank mechanism comprising an elongated crank comprising a plurality of hinged sections; the crank having first and second ends; a shaft having first and second ends and operatively connected at the first end to the second spool means of the spring for rotation therewith; a universal joint mounting the first end of the crank to the second end of the shaft; the shaft oriented at an angle such that when the crank is pivotally moved via the universal joint into an acute angle orientation relative to the shaft, the crank can be rotated about its longitudinal axis without propeller rotation, thereby rotating the pulley means to raise or lower the window cover; and such that at rest the angle between the crank and the shaft is sufficiently large such that rotation of the shaft is accompanied by propeller rotation of the crank about its longitudinal axis which thereby acts as a brake against movement of the pulley means.

64. (Previously presented) The cover system of claim 62, the crank mechanism comprising an elongated crank comprising a plurality of hinged sections; the crank having first and second ends; a shaft having first and second ends and operatively connected at the first end to the second spool means of the spring for rotation therewith; a universal joint mounting the first end of the crank to the second end of the shaft; the shaft mounted proximate the base at a non-horizontal orientation such that at rest the crank depends relative to the shaft at an angle sufficiently small to permit rotation of the crank about its longitudinal axis without propeller rotation about the shaft.

65. (Previously presented) The cover system of any of claims 52, 54 and 57, wherein the pulley means comprises a pulley and the lift cord means comprises a lift cord.

66. (Previously presented) The cover system of any of claims 52, 54 and 57, wherein the pulley means comprises a pulley and the lift cord means comprises a plurality of lift cords.

67. (Previously presented) The cover system of any of claims 52, 54 and 57, wherein the pulley means comprises a plurality of pulleys and the lift cord means comprises a plurality of lift cords.